VIA-017-CIP

Date of Paper: December 26, 2006
In Regard to Notice of Allowance dated September 27, 2006

In re application of: **Brian C. Banister**

Confirmation No. **3966**

Serial No.: **10/076,925**

Group Art Unit: **2611**

Filed: **February 14, 2002**

Examiner: **Ghulamali, Qutbuddin**

For: **Method and Apparatus for Applying Overlaid Perturbation Vectors**
For Gradient Feedback Transmit Antenna Array Adaptation

Mail Stop Issue Fee
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

COMMENTS ON EXAMINER'S STATEMENT OF REASONS FOR ALLOWANCE

Dear Sir:

This paper responds to the Examiner's Statement of Reasons for Allowance set forth in paragraphs 4-5, pages 2-3, of the Notice of Allowability that was mailed September 27, 2006 together with the Notice of Allowance and Fee(s) Due in respect to the above-identified application. These Comments are being timely submitted, together with payment of the issue fee, within three months after the mailing date of the Notice of Allowance in respect of the subject application. Consideration of the following comments on the Examiner's Statement of Reasons for Allowance is respectfully requested.

COMMENTS

On page 3, paragraph 5, of the Notice of Allowability, the Examiner references base claims 1 and 15 in conjunction with several recited limitations. While the recited limitations correspond to those in claim 15, many of the recited limitations are not included within the text or scope of claim 1. Allowed claim 1 was amended by Examiner's Amendment (see pages 2-3, paragraph 4, of the Notice of Allowability). The language of claim 1 speaks for itself and *is not* limited to those methods comprising:

      i)   determining a first index base weight, a first index even weight, a first index odd weight and a first index data weight from a first set of equations,

      ii)   waiting for the second index to increment, wherein incrementing the second index indicates a second state, and

      iii)   if the feedback indicates that an even channel yielded better results, then determining a second index base weight, a second index even weight, a second index odd weight and a second index data weight from a second set of equations, else determining the second index base weight, the second index even weight, the second index odd weight and the second index data weight from a third set of equations; and

e)   returning to step (a) and applying the new weight vector perturbation vector for gradient feedback transmit antenna array adaptation in the communication system.

Rather, allowed claim 1 recites:

A method of applying overlaid perturbation vectors for gradient feedback transmit antenna array adaptation in a communication system, wherein the communication system includes a transmitter and a receiver, and wherein the transmitter includes a plurality of antennae, comprising the steps of:

      a)   overlaying at least one weight vector perturbation vector;

b) measuring signals transmitted in accordance with multiple weight vector perturbation vectors during a measurement interval, wherein the measurement interval has a greater duration than a feedback interval;

c) generating a feedback based on the measurements of step (b);

d) determining a new weight vector perturbation vector based on the feedback generated in the step (c); and

e) returning to the step (a) and applying the new weight vector perturbation vector for gradient feedback transmit antenna array adaptation in the communication system;

wherein, at a time i, an even weight vector $w_{even}(i)$, an odd weight vector $w_{odd}(i)$, and a data weight vector $w(i)$, are represented by the following equations in which $w_{base}(i)$ at least approximates a preceding weight vector, β comprises an algorithm parameter, I comprises a number of time periods, and $v(k)$ comprises a perturbation vector:

$$\text{i) } \mathbf{w}_{even}(i) = \frac{\mathbf{w}_{base}(i) + \beta \|\mathbf{w}_{base}(i)\| \cdot \sum_{k=i-I+1}^{i} \mathbf{v}(k)}{\left\| \mathbf{w}_{base}(i) + \beta \|\mathbf{w}_{base}(i)\| \cdot \sum_{k=i-I+1}^{i} \mathbf{v}(k) \right\|} \; ;$$

$$\text{ii) } \mathbf{w}_{odd}(i) = \frac{\mathbf{w}_{base}(i) - \beta \|\mathbf{w}_{base}(i)\| \cdot \sum_{k=i-I+1}^{i} \mathbf{v}(k)}{\left\| \mathbf{w}_{base}(i) - \beta \|\mathbf{w}_{base}(i)\| \cdot \sum_{k=i-I+1}^{i} \mathbf{v}(k) \right\|} \; ; \text{ and}$$

$$\text{iii) } \quad \mathbf{w}(i) = \frac{\mathbf{w}_{even}(i) + \mathbf{w}_{odd}(i)}{2}.$$

Appropriate scope should be accorded claim 1 based on the broader language recited therein.

In addition to the above discrepancy, note that claim 5 was canceled in Applicant's Amendment After Final Action filed on February 27, 2006. The Office Action dated April 17, 2006, also evidences that claim 5 was no longer pending as of that date. Thus, claim 5 should not be included within the listing of allowed claims.

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Fees required to cause these Comments to be complete and timely filed may be charged, and any overpayments should be credited, to our Deposit Account No. 50-0490.

Respectfully submitted,

Dec. 26, 2006
Date: December 26, 2006
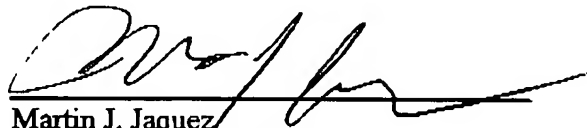
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